

Amendments to the Drawings:

The Applicant presents 1 replacement sheet and 1 annotated sheet showing the changes made to the drawings.

More particularly, Applicant has amended Figure 11 to include the reference of "Prior Art".

Attachment:**1 Replacement Sheet****1 Annotated Sheet Showing Changes Made**

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REMARKS

Applicant has amended claims 16, 34, 38, 39, 43, and 45. Claims 38 and 39 have not been amended in view of any cited art or rejection or for any other reason of patentability. Rather, claims 38 and 39 have been amended to correct a typographical error in the claim dependency. Accordingly, claims 1, 3-22, 24-39, and 43-46 are pending for examination with claims 1, 16, 27, 34, 37, 43, and 45 being independent claims.

Objections to the Drawings

Figure 11 was objected to since it did not include a subtitle of "Prior Art". Accordingly, Applicant respectfully submits a request to amend Figure 11 to include the subtitle of "Prior Art" as shown in the attached replacement drawing sheet. Accordingly, the objection should be withdrawn.

Rejections under 35 U.S.C. § 101

Claims 1 and 3-15 stand rejected under 35 U.S.C. § 101 as being directed towards non-statutory subject matter. Specifically, the stored data structure is considered to be "non-functional descriptive material" and does not satisfy the practical application requirement as discussed in M.P.E.P. § 1206 IV.B.1.

Initially, the undersigned wishes to thank Examiner Yang for the courtesies extended the telephone interview on August 16, 2005. In a brief discussion of the rejections under § 101, the Examiner stated that data structure claims were unpatentable under M.P.E.P. § 1206, unless the claimed data structure was "doing something." Applicant responded that this stance was against the determination in the

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Lowry case and that such an amendment would turn the data structure claim into a method claim. Examiner Yang declined to substantively review the rejection during the interview, and suggested that he set up a teleconference interview with his SPE. We agreed that he would set up the interview for sometime between August 22–August 26. Applicant did not hear from Examiner Yang until August 31, 2005. Examiner Yang did not set up an interview as requested with his SPE. Rather, Examiner Yang stated that he had talked to several people about the § 101 rejection. He suggested that claim 1 would become patentable if amended to recite that the data is displayed or that the data structure is generated from the matter claimed. Applicant's attorney respectfully traversed this rejection and suggested amendments, as stated further below. Applicant's attorney also asked about the requested interview with the Examiner and the SPE regarding the rejections in view of the cited art. The Examiner stated that he had not set up such an interview and would check 'with others' about setting up such a telephone interview.

Applicant respectfully traverses the rejection under § 101. Initially, M.P.E.P. § 1206 IV.B.1 states that "functional descriptive material consists of data structures and computer programs which impart functionality when employed as a computer component. ... Nonfunctional descriptive material includes but is not limited to music, literary works and a compilation or mere arrangement of data." In accordance with these definitions, Applicant's claimed data structure of claim 1 is not "non-functional descriptive material" as suggested by the rejection under § 101, since it is not music, a literary work, or a mere arrangement of data. Specifically, the tile data structure of claim 1 is not a mere arrangement of data, but a computer readable medium storing a specific plurality of tile data structures, where each tile data structure represents a respective view of the image texture displayed on a display screen immediately adjacent

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each other. This claimed computer readable medium storing a data structure is not a mere arrangement of data, i.e., non-functional descriptive material.

If the Examiner is suggesting that the claimed subject matter of claim 1 is "functional descriptive material", the rejection is not appropriate under § 101. "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." (M.P.E.P. § 1206 IV.B.1 citing *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *In re Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994) (claim to data structure *per se* held non-statutory). Moreover, as stated in the M.P.E.P. § 1206 IV.B.1(a), "a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." Like *Lowry*, Applicant's claimed data structure is stored on a computer readable medium and thus is not non-functional descriptive material and not *per se* non-statutory. Accordingly, the claimed data structure stored on a computer readable medium is claimable subject matter under § 101 as described in M.P.E.P. § 1206 IV.B.1, *In re Lowry*, and *In re Warmerdam*. Thus, Applicant requests that the rejection under § 101 be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 16-22, 26-28, 30-31, 33-36, 39, 43, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,616,079 to Iwase [hereinafter Iwase]. Applicant respectfully traverses the rejections as follows.

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Independent Claim 16

As noted in Applicant's response filed December 22, 2004, Iwase does not teach or suggest the features of claim 16. As noted above, these arguments were not responded to by the Examiner in the Office action mailed May 31, 2005. Thus, Applicant believes that the Office action mailed May 31, 2005, is incomplete and should be withdrawn.

The present Office action characterizes Iwase as disclosing a plurality of texture tiles which represent plural adjacent regions of the image surface to which regions the texture map is applied and determining a user viewing angle for each of the plural regions by referencing Iwase col. 5, lines 7-27 and Figure 8. Col. 5, lines 7-27 state:

[A] plurality of map segment patterns are previously stored to correspond with the positional range of the vehicle operated by the player and the player's line-of-sight directional range. The game space setting means sets the game space by selecting one of this plurality of map segment patterns on the basis of the position of the vehicle and the player's line-of-sight direction, while the game is in progress. For example, assume that a map segment pattern P11 corresponding to a first positional range and a first line-of-sight directional range and a map segment pattern P21 corresponding to a second positional range and the first line-of-sight directional range are stored. Similarly, assume that a map segment pattern P22 corresponding to the second positional range and the second line-of-sight directional range is stored. When the vehicle position is in the first positional range and the player's line-of-sight direction is within the first line-of-sight directional range, the map segment pattern P11 is selected. The map that forms the game space is segmented in accordance with this map segment pattern P11. When the vehicle moves such that it enters the second positional range but the line-of-sight directional range remains unchanged, map segment pattern P21 is now selected. In this state, if the player's line-of-sight direction changes so that it is now within the second line-of-sight directional range, the configuration is such that now the map segment pattern P22 is selected.

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In this manner, the cited section of lwase teaches that based on a single line-of-sight direction and a single range of the user, the map is segmented according to a predetermined map segment pattern, either P11, P21, or P22.

Claim 16 as amended recites, *inter alia*, identifying plural adjacent regions of the image surface to which regions the texture map is to be applied, determining a user viewing angle for each of the plural regions, at least two of the determined user viewing angles of at least two of the plural regions being different, and correlating each viewing angle with a texture tile corresponding to the viewing angle. lwase does not teach or suggest determining a user viewing angle for each of the plural regions, at least two of the determined user viewing angles of at least two of the plural regions being different. Rather, lwase teaches that the entire map comprising several map segments according to a predetermined map pattern all have the same line-of-sight. In this manner, adjacent regions of an image surface in lwase do not have different user viewing angles as claimed in claim 16. More particularly, the map segment patterns of P11 and P22 of lwase, although having different line-of-sight directional ranges, are not displayed together at the adjacent regions on the computer display screen to form a texture map on the image surface as claimed in claim 16.

In addition, the Office action suggests that since lwase discloses an image rendering unit in FIG. 19, that lwase then suggests that "the Image rendered is a texture image." Applicant respectfully traverses this logic. Specifically, Applicant agrees that lwase discloses an image rendering unit, and that such image rendering unit may be used to render an image texture on a displayed object. However, there is nothing in lwase that teaches or suggests that the map segment patterns of FIG. 8 and col. 5, lines 7-27 may be applied to texture tiles. Rather, the cited sections of lwase are directed towards rendering objects themselves, not the textures applied to object surfaces. As noted in Applicant's prior response of Dec. 22, 2004, lwase does not teach or suggest

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applying a texture map to an image surface. Similarly, mere disclosure of an image rendering unit in lwase does not teach or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify lwase in the manner suggested.

Accordingly, claim 16 is not rendered obvious by lwase and the rejection under § 103 should be withdrawn. Claims 17-22 and 23-26 depend from claim 16 and are patentable for at least the foregoing reasons.

Independent Claim 27

As noted in Applicant's response filed December 22, 2004, lwase does not teach or suggest the features of claim 27. As noted above, these arguments were not responded to by the Examiner in the Office action mailed May 31, 2005. Thus, Applicant believes that the Office action mailed May 31, 2005, is incomplete and should be withdrawn.

The present Office Action characterizes lwase in a manner similar to that described above with respect to claim 16. More particularly, the cited section of lwase teaches that the map is segmented according to a predetermined map segment pattern, either P11, P21, or P22, based on a single line-of-sight direction and a single range of the user.

lwase does not teach or suggest the features of claim 27 including determining plural selected viewing angles for viewing together plural adjacent tiles of the image texture. Rather, as noted above with respect to claim 16, lwase teaches that the entire map comprising several map segments according to a predetermined map pattern all have the same line-of-sight. Although the map segment patterns of P11 and P22 have different line-of-sight directional ranges, these map segment patterns are not for

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viewing together. Thus, the map segments of a displayed map in lwase all have the same viewing angle, and plural selected viewing angles for viewing together plural adjacent tiles of the image texture are not determined. Thus, claim 27 distinguishes over the cited sections of lwase and the rejection of claim 27 under § 103 should be withdrawn.

In addition, lwase does not teach or suggest the features of claim 27 including correlating each of the plural selected viewing angles to a predetermined range of viewing angles that includes the selected viewing angle, immediately successive predetermined viewing angles being correlated to adjacent tiles of the image texture. Rather, lwase appears to match a viewing angle of an entire screen to a single map segment map. Thus, there are no immediately successive predetermined viewing angles being correlated to adjacent tiles of the image texture, because all viewing angles in an image of lwase have the same user viewing angle. Accordingly, Applicant respectfully requests that the rejection under § 103 be withdrawn.

In addition, lwase does not teach or suggest the features of claim 27 including forming for each of the selected viewing angles a data structure that includes plural projections of the image texture relative to the selected viewing angles of plural adjacent tiles to be viewed together. As noted above, lwase does not teach or suggest plural viewing angles to be viewed together. Thus, the cited section of lwase does not teach or suggest forming a data structure that includes plural projections of the image texture to be viewed together. Accordingly, Applicant respectfully requests withdrawal of the rejection.

In addition, the Office action suggests that since lwase discloses an image rendering unit in FIG. 19, that lwase then suggests that "the image rendered is a texture image." Applicant respectfully traverses this logic. Specifically as noted above with respect to claim 16, mere disclosure of an image rendering unit in lwase does not teach

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or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify lwase in the manner suggested.

Accordingly, claim 27 is not rendered obvious by lwase and the rejection under § 103 should be withdrawn. Claims 28-33 depend from claim 27 and are patentable for at least the foregoing reasons.

Independent Claim 34

As noted in Applicant's response filed December 22, 2004, lwase does not teach or suggest the features of claim 34. As noted above, these arguments were not responded to by the Examiner in the Office action mailed May 31, 2005. Thus, Applicant believes that the Office action mailed May 31, 2005, is incomplete and should be withdrawn.

Claim 34 as amended recites, *inter alia*, software instructions for applying a texture map to an image surface in a graphics image comprising software instructions for determining a user viewing angle for each of the plural regions, at least two of the determined user viewing angles of at least two of the plural regions being different. As noted above with respect to claim 16, lwase does not teach or suggest determining a user viewing angle for each of the plural regions, at least two of the determined user viewing angles of at least two of the plural regions being different. Rather, lwase teaches that the entire map comprising several map segments according to a predetermined map pattern all have the same line-of-sight. In this manner, adjacent regions of an image surface in lwase do not have different user viewing angles as claimed in claim 34. More particularly, the map segment patterns of P11 and P22 of lwase, although having different line-of-sight directional ranges, are not displayed

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together at the adjacent regions on the computer display screen to form a texture map on the image surface as claimed in claim 34.

In addition, the Office action suggests that since lwase discloses an image rendering unit in FIG. 19, that lwase then suggests that "the image rendered is a texture image." Applicant respectfully traverses this logic. Specifically as noted above with respect to claim 16, mere disclosure of an image rendering unit in lwase does not teach or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify lwase in the manner suggested.

Accordingly, claim 34 is not rendered obvious by lwase and the rejection under § 103 should be withdrawn. Claims 35-36 depend from claim 34 and are patentable for at least the foregoing reasons.

Independent Claim 43

As noted in Applicant's response filed December 22, 2004, lwase does not teach or suggest the features of claim 43. As noted above, these arguments were not responded to by the Examiner in the Office action mailed May 31, 2005. Thus, Applicant believes that the Office action mailed May 31, 2005, is incomplete and should be withdrawn.

lwase does not teach or suggest the features of claim 43 including determining a projection viewing angle for each region of the array, at least two of the determined projection viewing angles being different. As noted above with respect to claim 16, lwase teaches that the entire map comprising several map segments according to a predetermined map pattern all have the same line-of-sight. In this manner, different regions of an image surface in lwase do not have different user viewing angles as

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claimed in claim 43. More particularly, the map segment patterns of P11 and P22 of lwase, although having different line-of-sight directional ranges, are not for the same image surface to be displayed together on the computer display screen to form a texture map.

In addition, the Office action suggests that since lwase discloses an image rendering unit in FIG. 19, that lwase then suggests that "the image rendered is a texture image." Applicant respectfully traverses this logic. Specifically as noted above with respect to claim 16, mere disclosure of an image rendering unit in lwase does not teach or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify lwase in the manner suggested.

Accordingly, claim 43 is not rendered obvious by lwase and the rejection under § 103 should be withdrawn. Claim 44 depends from claim 43 and is patentable for at least the foregoing reasons.

Independent Claim 45

As noted in Applicant's response filed December 22, 2004, lwase does not teach or suggest the features of claim 45. As noted above, these arguments were not responded to by the Examiner in the Office action mailed May 31, 2005. Thus, Applicant believes that the Office action mailed May 31, 2005, is incomplete and should be withdrawn.

lwase does not teach or suggest the features of claim 45 as amended including an array of plural tile data structures for displaying together on a display screen, the plural data structures comprising a first tile data structure representing a first projection

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view of the image texture based upon a first viewing angle and a second tile data structure representing a second projection view of the image texture based upon a second viewing angle, the first viewing angle being different from the second viewing angle. As noted above with respect to claim 16, lwase teaches that the entire map comprising several map segments according to a predetermined map pattern all have the same line-of-sight. In this manner, different regions of an image surface in lwase do not have different user viewing angles as claimed in claim 43. More particularly, the map segment patterns of P11 and P22 of lwase, although having different line-of-sight directional ranges, are to be displayed together on the computer display screen as claimed in claim 45.

In addition, the Office action suggests that since lwase discloses an image rendering unit in FIG. 19, that lwase then suggests that "the image rendered is a texture image." Applicant respectfully traverses this logic. Specifically as noted above with respect to claim 16, mere disclosure of an image rendering unit in lwase does not teach or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify lwase in the manner suggested.

Accordingly, claim 45 is not rendered obvious by lwase and the rejection under § 103 should be withdrawn. Claim 46 depends from claim 45 and is patentable for at least the foregoing reasons.

Rejections under 35 U.S.C. § 103

Claims 1, 3-12, 15, 24, 29, 37, 44, and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over lwase and further in view of U.S. Patent No. 5,080,368 to Weisser [hereinafter Weisser]. Applicant respectfully traverses the rejections as follows.

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Independent Claim 1

Applicant agrees with the Examiner's assertion that Iwase fails to teach or suggest the features of claim 1 including at least one of the plural respective views of the image texture being based upon an oblique-parallel projection of the image texture. However, the cited sections of Weisser do not cure this deficiency in Iwase. Specifically, a cited sections of Weisser, column 20, lines 49-53, describes the drawings of Figures 81-83 and states that "In the preferred embodiment of the hypercube, there are 16 vertices, 32 edges, 24 faces, and 8 cells or cubes represented by oblique parallel projection (the latter are separated out in FIG. 82)." In this manner, Weisser suggests that objects within a display frame may be based upon an oblique-parallel projection. However, claim 1 recites, *inter alia*, a computer-readable medium having stored thereon a tile data structure for a tile representing an image texture for tiled texture mapping. The objects displayed in Weisser are not an image texture for tiled texture mapping, but rather the objects themselves which may be applied texture mapping. There is nothing in Weisser to suggest that the texture mapping, if there were any, would also use an oblique parallel projection as recited in claim 1. Accordingly, Applicant believes that claim 1 distinguishes over the cited art and is patentable.

In addition, the Office action suggests that since Iwase discloses an image rendering unit in FIG. 19, that Iwase then suggests that "the image rendered is a texture image." Applicant respectfully traverses this logic. Specifically as noted above with respect to claim 16, mere disclosure of an image rendering unit in Iwase does not teach or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify Iwase in the manner suggested.

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Accordingly, claim 1 is not rendered obvious by Iwase in view of Weisser, and the rejection under § 103 should be withdrawn. Claims 3-15 depend from claim 1 and are patentable for at least the foregoing reasons.

Independent Claim 37

As noted in Applicant's response filed December 22, 2004, Iwase does not teach or suggest the features of claim 37. As noted above, these arguments were not responded to by the Examiner in the Office action mailed May 31, 2005. Thus, Applicant believes that the Office action mailed May 31, 2005, is incomplete and should be withdrawn.

Iwase does not teach or suggest the features of claim 37 as amended including computer software instructions for applying a texture map to an image surface in a graphics image rendered on a computer display screen, each texture map tile being based upon a predetermined tile structure and including an oblique parallel projection of the predetermined tile structure. The cited sections of Weisser do not cure the deficiency in Iwase regarding an oblique parallel projection. Specifically, the cited sections of Weisser suggest that objects within a display frame may be based upon an oblique-parallel projection. However, claim 37 recites a computer software instructions for applying a texture map to an image surface in a graphics image rendered on a computer display. The objects displayed in Weisser are not a texture map to be applied to an image surface, but rather the objects themselves to which a texture may be applied. There is nothing in Weisser to suggest that texture mapping, if there were any, would also use an oblique parallel projection as recited in claim 37. Accordingly, Applicant believes that claim 37 distinguishes over the cited art and is patentable.

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In addition, the Office action suggests that since lwase discloses an image rendering unit in FIG. 19, that lwase then suggests that "the image rendered is a texture image." Applicant respectfully traverses this logic. Specifically as noted above with respect to claim 16, mere disclosure of an image rendering unit in lwase does not teach or suggest modifying the disclosed map segmentation of displayed objects to creating and displaying texture tiles. Thus, the Office action provides no motivation to modify lwase in the manner suggested.

Accordingly, claim 37 is not rendered obvious by lwase in view of Weisser, and the rejection under § 103 should be withdrawn. Claims 38-39 depend from claim 37 and are patentable for at least the foregoing reasons.

CONCLUSION

Accordingly, in view of the above amendment and remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. Reconsideration and reexamination of the above Application is requested. Based on the foregoing, Applicants respectfully requests that the pending claims be allowed, and that a timely Notice of Allowance be issued in this case. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

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If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check please charge any deficiency to Deposit Account No. 50-0463.

Respectfully submitted,
Microsoft Corporation

Date: _____

By: _____

Carole A Boelitz, Reg. No.: 48,958
Attorney for Applicants
Direct telephone (425) 722-6035
Microsoft Corporation
One Microsoft Way
Redmond WA 98052-6399

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Date

Carole A Boelitz

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Amendment dated August 31, 2005

Reply to Office Action of May 31, 2005

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